



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/470,360    12/22/99    HORAN

K    C-7197

EXAMINER
----------

HM22/0131

M SUSAN SPIERING  
C/O CELANESE LTD  
PO BOX 9077  
CORPUS CHRISTI TX 78469-9077

ART UNIT	PAPER NUMBER
----------	--------------

1623  
DATE MAILED:

01/31/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademark

# Office Action Summary

Application No.

09/470,360

Applicant(s)

Horan et al

Examiner

TAYLOR VICTOR OH

Group Art Unit

1623



☒ Responsive to communication(s) filed on Jun 9, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-5 is/are pending in the application

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-5 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1623

*Claim Rejections - 35 USC § 103*

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1623

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papa et al (U.S. 5,231,222) in view of Spiske et al (U.S. 5,248,427).

Papa et al teaches a process of producing an ester compound by reacting an alcohol having an 2 to 5 carbon atoms with a carboxylic acid with 1 to 4 carbon atoms in the presence of an esterification catalyst (see col. 3, lines 9-17) in the following steps:

- a. removing the reaction products such as ester and water from the reactor by distillation,
- b. forming a water-ester azeotrope by the addition of water,
- c. separating the water-ester azeotrope in a separate vessel to isolate the desired ester (see col. 2 , lines 45-51).

However, the Papa et al reference differs from the instant invention in that there is no mention as to the use of the membrane separation unit to remove water and ethanol.

Spiske et al discloses a process for removing water from the reaction mixture obtained from the preparation of carboxylic esters by the reaction of alcohols and carboxylic acids in the presence of an acidic catalysts (see col. 1 , lines 43-48).

Therefore, if the person having an ordinary skill in the art had desired to improve the phase separation by means of the membrane separation unit during the esterification, it would have been obvious for the skillful artisan in the art to have used Spiske et al's the membrane separation unit in the Papa et al's esterification process, thereby facilitating the removal of water in the process as well as reducing the cost of the operation.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 1623

Powanda et al (U.S. 4,868,329) discloses a process for the preparation of carboxylic acid esters in which a carboxylic acid and an aliphatic mono or polyol by maintaining one of the reactants in the reactor at a high temperature and adding the other reactants over a period of time.

Fujita et al (U.S. 4,250,328) discloses a method of separating esters from a reaction mixture composed of ester, alcohol, organic acid and water. In the reaction the alcohol and organic acid are reacted to form the ester, and unreacted alcohol is removed as an alcohol-ester azeotrope.

Pugach et al (U.S. 5,502,240) discloses a process of making an esterification product in the presence of a heterogeneous titanium zeolite catalyst at a reaction temperature of 180° to 280° C.. The reaction mixture is cooled and excess alcohol is removed under vacuum and the esterified product is recovered after filtration.

Tong et al (U.S. 4,780,527) discloses a preparation of polyesters from terephthalic acid in a two-stage process: first, terephthalic acid and 1,4-butanediol are esterified in the presence of a catalyst such as an organo-tin compound and secondly the esterification product is subject to polycondensation.

McCready (U.S. 4,452,969) discloses a process of preparing polyalkylene dicarboxylates by reacting a dicarboxylic acid with an alkanediol in the presence of a titanium-containing chelate compound.

Art Unit: 1623

Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. Victor Oh whose telephone number is (703) 305-0809. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Geist, can be reached on (703) 308-1701. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

*TV*  
*1/27/01*



**GARY GEIST**  
**SUPERVISORY PATENT EXAMINER**  
**TECH CENTER 1600**